

1 Amendments to the Claims:

2 This listing of claims will replace all prior versions, and listings, or claims in this application:

4 Listing of Claims:

5 Claim 1 (original): A hydraulically activated downhole tool for use in a well bore
6 comprising:

7 a hydraulically operated tool including a hydraulically operating mechanism
8 controlled by fluid pressure; and

9 a control sub comprising a tubular assembly having a through passage between an
10 inlet and a first outlet, the inlet being adapted for connection on a workstring, the
11 first outlet being adapted for connection to the hydraulically operated tool, one or
12 more radial outlets extending generally transversely of the tubular assembly, an
13 obturating member moveable between a first position permitting fluid flow through
14 the one or more radial outlets and a second position closing the one or more radial
15 outlets.

wherein the obturating member is moved from the first position to the second position by a compressive force applied from the hydraulically operated tool; and movement of the obturating member regulates the fluid pressure from the first outlet to hydraulically control the hydraulically operated tool.

21 Claim 2 (original): A hydraulically activated downhole tool as claimed in Claim 1 wherein a
22 cross-sectional area of the first outlet is greater than a cross-sectional area of the
23 second outlet.

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25 Claim 3 (currently amended): A hydraulically activated downhole tool as claimed in Claim
26 1 or ~~Claim 2~~ wherein the compressive force occurs from the hydraulically operated
27 tool remaining static relative to movement of the workstring and the control sub.

1 Claim 4 (currently amended): A hydraulically activated downhole tool as claimed in any
2 preceding Claim 1 wherein the tubular assembly comprises an inner sleeve and an
3 outer sleeve, sealingly engaged to each other.

4

5 Claim 5 (original): A hydraulically activated downhole tool as claimed in Claim 4 wherein
6 the outer sleeve is adapted to connect to the workstring and the inner sleeve is
7 adapted to connect to the hydraulically operated tool.

8

9 Claim 6 (currently amended): A hydraulically activated downhole tool as claimed in Claim
10 4 or Claim 5 wherein the inner and outer the sleeves include mutually engageable
11 faces so that the sleeves may be axially slideable in relation to each other over a
12 fixed distance.

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14 Claim 7 (currently amended): A hydraulically activated downhole tool as claimed in any
15 ~~one of Claims 4 to 6~~ Claim 4 wherein the obturating member is a sleeve, coupled to
16 the inner sleeve of the tubular assembly.

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18 Claim 8 (currently amended): A hydraulically activated downhole tool as claimed in any
19 ~~one of Claims 4 to 7~~ Claim 4 wherein the one or more radial ports are located on
20 the outer sleeve.

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22 Claim 9 (original): A hydraulically activated downhole tool as claimed in Claim 8 wherein
23 matching radial ports are located on the obturating member such that under
24 compression each set of radial ports align to allow fluid to flow radially from the sub.

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26 Claim 10 (currently amended): A hydraulically activated downhole tool as claimed in any
27 ~~one of Claims 4 to 9~~ Claim 4 wherein an outer surface of the inner sleeve includes a

1 portion having a polygonal cross-section and an inner surface of the outer sleeve
2 has a matching polygonal cross-section.

3

4 Claim 11 (original): A hydraulically activated downhole tool as claimed in Claim 10 wherein
5 the polygonal cross sections are hex cross-sections.

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7 Claim 12 (currently amended): A hydraulically activated downhole tool as claimed in any
8 preceding Claim 11 wherein the sub includes an indexing mechanism.

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10 Claim 13 (original): A hydraulically activated downhole tool as claimed in Claim 12 wherein
11 the indexing mechanism comprises mutually engageable formations on the inner
12 and outer sleeves.

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14 Claim 14 (original): A hydraulically activated downhole tool as claimed in Claim 13 wherein
15 the engageable formations comprise at least one pin and a slot into which the pin(s)
16 engage.

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18 Claim 15 (original): A hydraulically activated downhole tool as claimed in Claim 14 wherein
19 the slot extends circumferentially around a surface of a sleeve to provide a
20 circumferential path for the pin.

21

22 Claim 16 (original): A hydraulically activated downhole tool as claimed in Claim 15 wherein
23 the slot includes one or more longitudinal profiles as offshoots from the
24 circumferential path to allow the sleeves to move relative to each other to effect the
25 relocation of the obturating member from one position to another.

26

27 Claim 17 (currently amended): A hydraulically activated downhole tool as claimed in any
28 preceding Claim 1 wherein the hydraulically operated tool is an expander tool.

1 Claim 18 (original): A method of controlling a hydraulically activated downhole tool in a
2 well bore, the method comprising the steps:
3 a) mounting a work string, a hydraulically activated downhole tool having a
4 hydraulically operated tool including a hydraulically operating mechanism
5 controlled by fluid pressure, and a control sub, the sub including a first outlet to
6 the hydraulically operated tool and one or more radial outlets through which
7 fluid within the workstring will flow when not obstructed by an obturating
8 member, the obturating member being moveable under a compressive force
9 from the hydraulically operated tool;
10 b) running the hydraulically activated downhole tool into a well bore and locating
11 the hydraulically operated tool on a formation in the well bore;
12 c) compressing the control sub by setting down weight on the hydraulically
13 operated tool;
14 d) using the compressive force to move the obturating member and thereby
15 control the fluid flow through the radial outlets, regulating the fluid pressure
16 from the first outlet to hydraulically control the hydraulically operated tool and
17 thereby control the hydraulically activated tool.

18

19 Claim 19 (original): A method as claimed in Claim 18 wherein the method includes the
20 step of running the hydraulically activated tool in the well bore with the radial outlets
21 in an open position and circulating fluid within the well bore.

22

23 Claim 20 (currently amended): A method as claimed in Claim 18 or ~~Claim 19~~ wherein the
24 method includes the steps of picking up and setting down the weight of the string
25 repeatedly to cycle opening and closing of the radial outlets and thus provide a
26 selective continuous “on” and “off” operation of the hydraulically activated tool.

27

1 Claim 21 (original): A method of expanding a pipe within a casing of a well bore, the
2 method comprising the steps:

- a) mounting a work string, a hydraulically activated downhole tool having an expander tool controlled by hydraulic fluid pressure, and a control sub, the sub including a first outlet to the hydraulically operated tool and one or more radial outlets through which fluid within the workstring will flow when not obstructed by an obturating member, the obturating member being moveable under a compressive force from the hydraulically operated tool;
 - b) running the hydraulically activated downhole tool into a well bore and locating the expander tool on the pipe;
 - c) compressing the control sub by setting down weight on the expander tool;
 - d) using the compressive force to move the obturating member and thereby prevent fluid flow through the radial outlets;
 - e) pressuring up the expander tool by fluid pressure from the first outlet; and
 - f) expanding the pipe using the expander tool at a constant fluid pressure while maintaining the compressive force on the sub.

18 Claim 22 (original): A method as claimed in claim 21 wherein the method includes the step
19 of running the hydraulically activated tool in the well bore with the radial outlets in
20 an open position and circulating fluid within the well bore.